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Catalogue of the British Columbia Provincial Museum.¹—It includes mammals, birds, fishes, insects, trees, plants, fossils, ethnological specimens, etc. The distribution of the species of mammals, as well as the source of the museum specimen, is given. A full check list of the birds of the province bears a special check mark opposite those lacking in the collection, in order that the friends of the museum may know what is most acceptable. Very little is yet known of the birds of the northern and eastern parts of British Columbia. The eggs are listed, but the study-series of bird-skins, which are available to all students, is not published in the catalogue.

The ethnological collection is classified under several heads, as houses, dress, ceremony, craniology, etc. The introduction to this list differentiates the Indians of British Columbia from those of the Plains, and cautions one against drawing hasty conclusions of Japanese affinities or origin.

HARLAN I. SMITH.

The Systematic Position of *Peripatus*.—Since the discovery by Moseley of tracheæ in *Peripatus*, over twenty years ago, scarcely a doubt has been thrown upon the arthropod nature of this interesting animal. Recently² Boas, one of the most accurate students of the arthropods, has taken up the question of the affinities of the form in question, and after a careful consideration of its structure decides that it has nothing decidedly arthropodan in its make-up, but that in all deciding points it is clearly an annelid modified for a terrestrial life. It lacks the thick jointed cuticle characteristic of the arthropod, and its appendages are not arthropodan. It possesses the external circular layer of muscles which is not found in any true arthropod, and all of its muscles are of the smooth variety. The eyes are upon the annelidan type; the nephridia are numerous; the characteristic arthropodan hairs are lacking, while the claws, upon which so much weight has been placed, are built upon a different plan, being solid rather than hollow outgrowths.

A few points need more space. The jaws of *Peripatus* are modified appendages, according to both von Kennel and Sedgwick. Boas, however, points out that this jaw is but the terminal claw of *Peripatus* and is not the whole limb. He also calls attention to the relations of the parapodia to the mouth in the polynoid worms. The heart, like that of arthropods and unlike that of the annelid, is pro-

¹ *A Preliminary Catalogue of the Collections of Natural History and Ethnology in the Provincial Museum, Victoria, British Columbia*, 1898, p. 196, is being issued.

² *Kgl. danske Vidensk. Selsk. Forhandlingar*, 1898, No. 6 (1899).

vided with ostia and is placed in a pericardial sinus, but the ostia in *Peripatus* can be explained by the disappearance of the transverse vessels, while the pericardium is merely a blood sinus, the result of the atrophy of true circulatory tubes, these having degenerated as a consequence of the development of tracheæ. In regard to tracheæ, Boas points out that tracheæ of different kinds can exist, and that it has yet to be proved that those of *Peripatus* and those of the "Tracheata" are homologous; with the bulk of the evidence against the view. It is further emphasized that if *Peripatus* be a stem form for the "Tracheates," then, of necessity, the Arthropoda must form a polyphyletic group—in other words, the Arthropoda must go, for we cannot conceive how the Crustacea could have descended from insectan or myriapod ancestors. In this connection, see this journal, Vol. XXVIII, p. 230, 1894, and *Natural Science*, Vol. X, pp. 97 ff., 1897.

New York Amphibia.¹—The Linnæan Society of New York has been issuing a series of bulletins on the local fauna of the surroundings of New York City. This work is one strongly to be commended. The *Naturalist* believes thoroughly in the importance of the study of local faunas. The present list describes 11 species: 1 *Bufo*, 1 *Scaphiopus*, 4 *Hyladæ*, and 5 *Rana*. Statements are also made concerning distribution, habitat, note, and egg-laying habits. The pamphlet will be valuable to teachers of zoölogy, as well as to investigators.

Adaptive Modifications in Respiratory Organs of the water-inhabiting mammals, especially the cetaceans, in response to their changed environment, have been investigated by O. Müller.² In most pronounced cases the trunk of the animal assumes the form of a spindle to accelerate movement through the water. The thorax is somewhat flattened dorso-ventrally, and the lungs, in which the lobes have been lost by fusion, are more extensively developed dorsally than ventrally. This is especially well seen in the bronchial branches, which, instead of being exclusively ventral, are often dorsal. The thoracic muscles are strong. The trachea is provided with complete cartilage rings instead of incomplete ones, as in most mammals, and the shortening

¹ Sherwood, W. L. The Frogs and Toads Found in the Vicinity of New York City, *Proc. Linn. Soc., New York*, No. 10, 27 pp., 1898.

² Müller, O. Untersuchungen über die Veränderungen, welche die Respirationsorgane der Säugetiere durch die Anpassung an das Leben im Wasser erlitten haben, *Jena. Zeitschr.*, Bd. xxxii, pp. 95-230, Taf. iii-vi, 1898.